CLAIMS

1.   A method of calibrating an imaging system, the method comprising:

printing a test patch having a desired test patch appearance;

scanning the test patch to identify an initial test patch appearance;

determining an appearance-affecting condition;

predicting a settled test patch appearance based on the determined appearance-affecting condition and the initial test patch appearance;

comparing the predicted settled test patch appearance with the desired test patch appearance to yield a correction factor; and

calibrating the imaging system to apply the correction factor to a subsequent printing operation.

2.   The method of claim 1, wherein the appearance-affecting condition is an environmental condition.

3.   The method of claim 2, wherein the environmental condition is determined using a sensor incorporated in the imaging system.

4.   The method of claim 2, wherein the environmental condition is ambient humidity.

5.   The method of claim 4, which further comprises determining ambient temperature; and wherein the step of predicting a settled test patch appearance is based on ambient temperature and ambient humidity.

6.   The method of claim 2, wherein the environmental condition is ambient temperature.

7.   The method of claim 1, wherein the appearance-affecting condition is lamination.

8.   The method of claim 2, which further comprises selecting a print medium type, wherein the step of predicting a settled test patch appearance is based on the environmental condition and the print medium type.

9.   A method of predicting ultimate appearance of an image produced by an imaging system, the method comprising:

printing a plurality of test patches;

optically scanning the test patches to determine an initial color for each test patch;

permitting the test patches to individually settle under an appearance-affecting condition for a predetermined time;

optically scanning the test patches to determine a final color for each test patch;

calculating a shift vector for each test patch from the initial color to the final color that is a function of the appearance-affecting condition;

applying the appropriate shift vector for a field appearance-affecting condition to a field test patch to yield a predicted field test patch color.

10.   The method of claim 9, wherein the test patches are permitted to settle for 1 to 96 hours.

11.   The method of claim 9, wherein the test patches are permitted to settle under a variable environmental condition.

12.   The method of claim 11, wherein the environmental condition is humidity.

13.   The method of claim 11, wherein the imaging system is a multi-color imaging system utilizing primary colors, and at least one test patch is printed using each primary color.

5   14.   The method of claim 9, wherein the shift vector is a vector in CIE L*a*b* color space.

15.   The method of claim 9, wherein the shift vector is a vector in CMYK color space.

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16.   A multi-color imaging system, comprising:

a print engine configured to apply colorant to a print medium based on input color values corresponding to a desired color;

an input configured to identify an appearance-affecting condition;

a data storage device including a plurality of color shift vectors selected

15   to predict color settling under various appearance-affecting conditions; and

a processor linked to the data storage device and the input, the processor being configured to apply an appropriate color shift vector to an initial color to predict a settled color under the selected appearance-affecting condition.

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17.   The multi-color imaging system of claim 16, wherein the input is a sensor input defining an environmental condition.

18.   The multi-color imaging system of claim 16, which further

25   comprises an optical scanner linked to the processor and oriented to scan the print medium to determine the initial color.

19.   The multi-color imaging system of claim 16, wherein the processor is further configured to compare the predicted settled color to the desired

30   color, and providing the print engine with subsequent input color values to yield a subsequent initial color that is predicted to settle under the appearance-affecting condition to the desired color.

20.   The multi-color imaging system of claim 16, wherein the processor is further capable of exporting the predicted settled color to an external image processor.

5   21.   The multi-color imaging system of claim 16, wherein the imaging system is an inkjet printer, an electrophotographic printer, or an offset printer.

22.   An inkjet printer, comprising:

a printer carriage for applying a plurality of colorants to a print medium;

10   an optical scanner incorporated into the printer carriage, the optical scanner including a light source and a light detector, where the optical scanner is configured to scan the print medium;

a sensor able to measure an environmental condition;

a data storage device having stored thereon a plurality of color shift

15   vectors that are functions of the environmental condition; and

a processor linked to the data storage device capable of applying the appropriate color shift vector for the measured environmental condition to an initial scanned color to yield a predicted settled color for the measured environmental condition.

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